WE CLAIM AS OUR INVENTION:

1. An electromechanical motor comprising:

two electromechanical drive elements respectively producing linear displacements;

a drive ring in mechanical connection with said drive elements for causing said drive ring to execute a circulatory displacement motion by a combination of said linear displacements; and

a shaft in rolling line contact with said drive ring, said shaft being rotated by said circulatory displacement motion of said drive ring.

2. An electromechanical motor as claimed in claim 1 wherein each of said drive elements has a piezo actuator for driving that drive element.

3. An electromechanical motor as claimed in claim 1 wherein said drive ring is circular, and wherein said drive elements are mechanically attached to said ring so that said respective linear displacements act radially on said drive ring.

4. An electromechanical motor as claimed in claim 1 wherein said circulatory displacement motion takes place in a motion plane, and wherein said drive elements are disposed relative to each other at an angle of approximately 90° in said motion plane.

5. An electromechanical motor as claimed in claim 1 wherein said circulatory displacement motion takes place in a motion plane, and further comprising at least one further electromechanical drive element, said two electromechanical drive elements and said at least one further electromechanical drive element being disposed relative to each other at equal angles in said motion plane.

6. An electromechanical motor as claimed in claim 1 wherein said shaft is disposed inside said drive ring.

7. An electromechanical motor as claimed in claim 1 wherein said shaft is disposed outside of said drive ring.

8. An electromechanical motor as claimed in claim 1 further comprising lever translators respectively connected between said drive elements and said drive ring and respectively mechanically connecting said drive elements to said drive ring.

9. An electromechanical motor as claimed in claim 1 further comprising a spring element mechanically connected to said drive ring at a location opposite at least one of said drive elements.

10. An electromechanical motor as claimed in claim 1 wherein said drive ring is disposed relative to said drive shaft so that a permanent pressure contact exists between said drive ring and said shaft.

11. An electromechanical motor as claimed in claim 1 further comprising at least two further electromechanical drive elements which respectively produce linear displacements, and at least one further drive ring in mechanical connection with said at least two further drive elements, said at least one further drive ring being caused to execute said circulatory displacement motion by a combination of the linear displacements of said at least two further drive elements, and said shaft being in rolling line contact with each of said drive ring and said at least one further drive ring, said shaft being rotated by the circulatory displacement motions of said drive ring and said at least one further drive ring.

12. An electromechanical motor as claimed in claim 1 wherein said drive elements are first drive elements and wherein said drive ring is a first drive ring, and further comprising two second electromechanical drive elements which respectively produce linear displacements, a second drive ring in mechanical connection with said second drive elements, said second drive ring being caused to execute said circulatory displacement motion by a combination of the linear displacements of said second drive elements, and a third drive ring coupling said first drive ring to said second drive ring and being disposed between said first drive ring and said second drive ring, said shaft being in rolling line contact with each of said first drive ring, said second drive ring and said third drive ring, said shaft being rotated by the respective circulatory displacement motions of said first drive ring and said second drive ring coupled by said third drive ring.

13. A method for operating an electromechanical drive, comprising the steps of:

placing a drive ring in mechanical connection with two electromechanical drive elements;

producing respective linear displacements with said drive elements for causing said drive ring to execute a circulatory displacement motion by a combination of said linear displacements; and

placing a shaft in rolling line contact with said drive ring and rotating said shaft with said circulatory displacement motion of said drive ring.

14. A method as claimed in claim 13 wherein said circulatory displacement motion takes place in a motion plane, and comprising the additional steps of disposing said drive elements at an angle relative to each other of approximately 90° in said motion plane, and pressure pre-stressing said drive elements so that in an initial position of said shaft relative to said drive ring, said respective linear displacements are minimal and a permanent pressure contact is produced between said drive ring and said shaft and so that during operation the respective linear displacements are sinusoidal and chronologically act on said drive ring with a phase difference of approximately 90°.

15. A method as claimed in claim 13 wherein drive elements are first drive elements and wherein said drive ring is a first drive ring, and comprising the additional steps of:

placing two second electromechanical drive elements in mechanical connection with a second drive ring;

producing respective linear displacements with said second drive elements and thereby causing said second drive ring to execute said circulatory displacement motion; and

placing said second drive ring in rolling line contact with said shaft for rotating said shaft by the respective circulatory displacement motions of both of said first drive ring and said second drive ring.